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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,620	02/19/2002	Irada Ben-Gal	01/21716	9559
7590 Martin D. Moynihan PRTSI, Inc. P. O. Box 16446 Arlington, VA 22215		05/07/2007	EXAMINER SHARON, AYAL I	
			ART UNIT 2123	PAPER NUMBER
			MAIL DATE 05/07/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/076,620	Applicant(s) BEN-GAL ET AL.	
	Examiner Ayal I. Sharon	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 28 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. Claims 1-60 of U.S. Application 10/076,620, originally filed on 02/19/2002, are currently pending.
2. The application claims priority to U.S. Priority Application 60/269,344, filed 02/20/2001.
3. Applicants' amendment filed 02/28/07 has amended independent claims 1, 19, 21-22 and 51, and added new claims 58-60.

Continued Examination Under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/28/2007 has been entered.

Affidavits or Declarations Traversing Rejections, 37 CFR 1.132

5. The Declaration under 37 CFR 1.132 filed 02/28/2007 is insufficient to overcome the rejection of claims 1-57 based upon the Ben-Gal reference as set forth in the last Office action because: no evidence has been presented. The declaration, as presented, is merely a self-serving statement.
6. Relevant evidence would include (but is not limited to) notes or e-mails that indicate collaboration between the parties prior to the publication of the article.
7. The rejections are therefore maintained.

Claim Interpretations

8. Examiner interprets that Claims 19-50 are tangibly embodied in a computer, in light of the "reference model" limitation recited in claim 19. Examiner interprets that the "reference model" implies storage in a mechanical device. See In re Lowry, 32 USPQ 2d 1031 (Fed.Cir. 1994); In re Bernhart, 163 USPQ 611, 615 (CCPA 1969).

Claim Objections

9. Claim 19 is objected to because of the following informalities: the phrase in line 8, "so to determine" should be "so as to determine". Appropriate correction is required.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 1-14, and 19-40, and 44-60 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims attempt to patent every "substantial practical application" of an idea.

12. According to MPEP § 2106:

- a. The courts have also held that a claim may not preempt ideas, laws of nature or natural phenomena. The concern over preemption was expressed as early as 1852. See Le Roy v. Tatham, 55 U.S. 156, 175 (1852) ("A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right."); Funk Brothers Seed Co. v. Kalo Inoculant Co., 333 U.S. 127, 132, 76 USPQ 280, 282 (1948) (combination of six species of bacteria held to be nonstatutory subject matter).
- b. One may not patent a process that comprises every "substantial practical application" of an abstract idea, because such a patent "in practical effect would be a patent on the [abstract idea] itself." Gottschalk v. Benson, 409 U.S. 63, 71-72; cf. Diamond v. Diehr, 450 U.S. 175, 187 (1981) (stressing that the patent applicants in that case did "not seek to pre-empt the use of [an] equation," but instead sought only to "foreclose from others the use of that equation in conjunction with all of the other steps in their claimed

process"). "To hold otherwise would allow a competent draftsman to evade the recognized limitations on the type of subject matter eligible for patent protection." Diehr, 450 U.S. at 192.

- c. According to MPEP § 2106 (IV)(C)(3), a claim that recites a computer that solely calculates a mathematical formula (see Benson) or a computer disk that solely stores a mathematical formula is not directed to the type of subject matter eligible for patent protection.

13. The applicants are attempting to patent a process that comprises every "substantial practical application" of an abstract idea. By applicants' own admission in the amendment filed on 2/28/2007, the claimed invention may be used by a bank to "analyze customer account activities in order to determine changes in a customer's financial stability" (see p.10, ¶1), or may be used as a medical application which "provides an alert when a change occurs in a patient's condition" (p.12, ¶2), or may be used to control a production line in a manufacturing process (p.12, ¶2), or may be used in a weather forecasting application (p.12, ¶2). These potential applications are in completely different fields of endeavor. The only commonality is the underlying statistical analysis (in other words, the underlying abstract idea). The applicants are therefore attempting to patent all "substantial practical applications" of this abstract idea when implemented on a computer.

Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 1-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The independent claims recite "outputting an analysis of the monitored process", however, it is not clear what constitutes "an analysis".

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

17. The prior art used for these rejections is as follows:

- a. Ben-Gal, I. et al. "An Information Theoretic Approach for Adaptive Monitoring of Processes." ASI2000, The Annual Conf. of ICIMS- NOE and IIMB. 2000. ("**Ben-Gal**").

18. Examiner notes that the Ben-Gal reference has a different inventive entity than the instant application.

19. Examiner also notes that according to Applicants' IDS submitted on 5/3/2006, the publication date of the Ben-Gal reference is "2000".

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20. The following reference indicates that the publication date of the Ben-Gal reference is September 18-20, 2000:

"Advanced Summer Institute 2000: The Annual Conference of the ICIMS-NOE (E.P. 23447)". Printed 8/23/06.
<http://www.lar.ee.upatras.gr/icims/asi/asi2000/asi2000.htm>

21. The claim rejections are hereby summarized for Applicants' convenience. The detailed rejections follow.

22. Claims 1-24 and 30-60 are rejected under 35 U.S.C. 102(a) as being anticipated by Ben-Gal.

23. In regards to Claim 1, Ben-Gal teaches the following limitations:

1. Apparatus embodied in a computer for building a stochastic model of a data sequence, said data sequence comprising time related symbols selected from a finite symbol set, the apparatus comprising:

an input for receiving said data sequence, wherein said data sequence describes ongoing states of an observed process,

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In our case, the string x^n represents sequenced values of buffer levels.")

a tree builder for expressing said symbols as a series of counters within nodes, each node having a counter for each symbol, each node having a position within said tree, said position expressing a symbol sequence and each counter indicating a number of its corresponding symbol which follows a symbol sequence of its respective node, and

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "The details of the context algorithm, which constructs the context tree ... can be found in /7,8/.")

a tree reducer for reducing said tree to an irreducible set of conditional probabilities of relationships between symbols in said input data sequence.

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(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In the second stage, the tree is pruned to obtain *S terminal contexts* ...")

a comparator for comparing said reduced tree with a reference tree obtained in advance of said receiving sequential data, so as to determine whether there has been a statistical change between said two trees, and for outputting an analysis of said monitored process in accordance with said comparing.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "Kullback Leibler proposed the KL measure of relative 'distance' between any distribution to a reference distribution /5/."

See also Ben-Gal: especially section 4, "Numerical Example", which teaches that "The proposed SPC methodology was applied to monitor the states of the buffer and to indicate possible changes in the characteristics of the production system.")

24. In regards to Claim 2, Ben-Gal teaches the following limitations:

2. Apparatus according to claim 1, said tree reducer comprising a tree pruner for removing from said tree any node whose counter values are within a threshold distance of counter values of a preceding node in said tree.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In the second stage, the tree is pruned to obtain *S terminal contexts* ...")

25. In regards to Claim 3, Ben-Gal teaches the following limitations:

3. Apparatus according to claim 2, wherein said threshold distance and tree construction parameters are user selectable.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In the second stage, the tree is pruned to obtain *S terminal contexts* ...")

26. In regards to Claim 4, Ben-Gal teaches the following limitations:

4. The apparatus of claim 3, wherein said user selectable parameters further comprise a tree maximum depth.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In the second stage, the tree is pruned to obtain *S terminal contexts* ...")

27. In regards to Claim 5, Ben-Gal teaches the following limitations:

5. The apparatus of claim 3, wherein said user selectable parameters further comprise an algorithm buffer size.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In our case, the string x^n represents sequenced values of buffer levels.")

28. In regards to Claim 6, Ben-Gal teaches the following limitations:

6. The apparatus of claim 3, wherein said user selectable parameters further comprise values of pruning constants.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In our case, the string x^n represents sequenced values of buffer levels.")

29. In regards to Claim 7, Ben-Gal teaches the following limitations:

7. The apparatus of claim 3, wherein said user selectable parameters further comprise a length of input sequences.

(See Ben-Gal: especially section 4, "Numerical Example", which teaches that "The KL statistic was calculated for each data record (run) of length $n=200$... At a certain stage of the experiment, new values of production probabilities ... were selected to represent an alteration in the process characteristics.")

30. In regards to Claim 8, Ben-Gal teaches the following limitations:

8. The apparatus of claim 3 wherein said user selectable parameters further comprise an order of input symbols.

(See Ben-Gal: especially section 4, "Numerical Example", which teaches that "The KL statistic was calculated for each data record (run) of length $n=200$... At a certain stage of the experiment, new values of production probabilities ... were selected to represent an alteration in the process characteristics.")

31. In regards to Claim 9, Ben-Gal teaches the following limitations:

9. Apparatus according to claim 2, wherein said tree reducer further comprises a path remover operable to remove any path within said tree that is a subset of another path within said tree.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In the second stage, the tree is pruned to obtain S terminal contexts ...")

32. In regards to Claim 10, Ben-Gal teaches the following limitations:

10. Apparatus according to claim 1, wherein said sequential data is a string comprising consecutive symbols selected from a finite set.

(See Ben-Gal: especially section 4, "Numerical Example", which teaches that "The KL statistic was calculated for each data record (run) of length $n=200$... At a certain stage of the experiment, new values of production probabilities ... were selected to represent an alteration in the process characteristics.")

33. In regards to Claim 11, Ben-Gal teaches the following limitations:

11. The apparatus of claim 10, further comprising an input string permutation limit for carrying out permutations and reorganizations of the input string using external information about a process generating said string.

(See Ben-Gal: especially section 4, "Numerical Example", which teaches that "The KL statistic was calculated for each data record (run) of length $n=200$ and its values were compared with the derived upper control limit ...")

34. In regards to Claims 12-18, Examiner interprets the Applicants' claims to be directed to mere intended uses of the invention.

35. In regards to Claim 19, Ben-Gal teaches the following limitations:

19. Apparatus embodied in a computer for determining statistical consistency in time sequential data, the apparatus comprising

a sequence input for receiving sequential data, wherein said data sequence describes ongoing states of an observed process.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In our case, the string x^n represents sequenced values of buffer levels.")

a stochastic modeler for producing at least one stochastic model from at least part of said sequential data,

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "The details of the context algorithm, which constructs the context tree ... can be found in /7,8/.")

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See also Ben-Gal: especially section 3, "Suggested Method", which teaches that "In the second stage, the tree is pruned to obtain *S* terminal contexts ...")

and a comparator for comparing said sequential stochastic model with a reference model, reference model obtained in advance of said receiving sequential data, so to determine whether there has been a statistical change in said data, and for outputting an analysis of said monitored process in accordance with said comparing.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "Kullback Leibler proposed the KL measure of relative 'distance' between any distribution to a reference distribution /5/."

See also Ben-Gal: especially section 4, "Numerical Example", which teaches that "The proposed SPC methodology was applied to monitor the states of the buffer and to indicate possible changes in the characteristics of the production system.")

36. In regards to Claim 20, Ben-Gal teaches the following limitations:

20. Apparatus according to claim 19, wherein said stochastic modeler comprises:

a tree builder for expressing said symbols as a series of counters within nodes, each node having a counter for each symbol, each node having a position within said tree, said position expressing a symbol sequence and each counter indicating a number of its corresponding symbol which follows a symbol sequence of its respective node, and

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "The details of the context algorithm, which constructs the context tree ... can be found in /7,8/."

a tree reducer for reducing said tree to an irreducible set of conditional probabilities of relationships between symbols in said input data sequence.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In the second stage, the tree is pruned to obtain *S* terminal contexts ...")

37. In regards to Claim 21, Ben-Gal teaches the following limitation:

21. Apparatus according to claim 19, said reference model being a model constructed using another part of said time-sequential data.

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(See Ben-Gal: especially section 4, "Numerical Example", which teaches that "The KL statistic was calculated for each data record (run) of length $n=200$... At a certain stage of the experiment, new values of production probabilities ... were selected to represent an alteration in the process characteristics.")

38. In regards to Claim 22,

22. Apparatus according to claim 19, said comparator comprising a statistical processor for determining a statistical distance between said stochastic model and said reference model.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In this paper, the KL measure is applied to detect the relative distance between the unknown monitored distribution which is estimated at time t ...")

See also Ben-Gal: especially section 4, "Numerical Example", which teaches that "The KL statistic was calculated for each data record (run) of length $n=200$...")

39. In regards to Claims 23-24, they are rejected on the same grounds as claim 22.

40. In regards to Claims 30-38, the claims are identical to claims 3-11, and therefore are rejected on the same grounds.

41. In regards to Claims 39-43, the claims are identical to claims 12, 14-16, and 18, and therefore are rejected on the same grounds.

42. In regards to claims 44-47, Examiner interprets the Applicants' claims to be directed to mere intended uses of the invention.

43. In regards to Claim 48, Weinberger teaches the following limitations:

48. Apparatus according to claim 22, wherein said data sequence comprises time sequential image data sequences said model being usable to determine a statistical distance therebetween.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "Kullback Leibler proposed the KL measure of relative 'distance' between any distribution to a reference distribution /5/.")

Examine finds the intended use of "image data" to be a mere intended use.

44. In regards to claims 49-50, Examiner interprets the Applicants' claims to be directed to mere intended uses of the invention.

45. In regards to Claim 51, Ben-Gal teaches the following limitations:

51. A computer implementing a method for building a stochastic model of a data sequence, said data sequence comprising time related symbols selected from a finite symbol set, the method comprising:

receiving said data sequence, wherein said data sequence describes ongoing states of an observed process.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In our case, the string x^n represents sequenced values of buffer levels.")

expressing said symbols as a series of counters within nodes, each node having a counter for each symbol, each node having a position within said tree, said position expressing a symbol sequence and each counter indicating a number of its corresponding symbol which follows a symbol sequence of its respective node,

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "The details of the context algorithm, which constructs the context tree ... can be found in /7,8/.")

reducing said tree to an irreducible set of conditional probabilities of relationships between symbols in said input data sequence, thereby to generate a stochastic model of said sequence, and

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In the second stage, the tree is pruned to obtain S terminal contexts ...")

comparing said stochastic model with a previously obtained reference model, so as to determine if there has been a statistical change between the two models, and for outputting an analysis of said monitored process in accordance with said comparing.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "Kullback Leibler proposed the KL measure of relative 'distance' between any distribution to a reference distribution /5/.")

See also Ben-Gal: especially section 4, "Numerical Example", which teaches that

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"The proposed SPC methodology was applied to monitor the states of the buffer and to indicate possible changes in the characteristics of the production system.")

46. In regards to Claim 52, Ben-Gal teaches the following limitations:

52. (New) The apparatus of claim 1, wherein said tree reducer is further configured to update said reference tree according to data in said reduced tree.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "In the second stage, the tree is pruned to obtain *S terminal contexts* (i.e., leafs and partial leafs), which are the shortest contexts satisfying the above definition and act as states.")

47. In regards to Claim 53, Ben-Gal teaches the following limitations:

53. (New) The apparatus of claim 1, wherein said trees represent non homogeneous data.

(See Ben-Gal: especially section 3, "Suggested Method", which teaches that "A context tree is a compact description of a sequence of data generated by a Finite State Machine." Examiner interprets that this data will not be a constant value, and therefore will be "non homogeneous".)

48. In regards to Claims 54-55, and 56-57, they are rejected on the same grounds as claims 52-53.

49. In regards to Claim 58, Ben-Gal teaches the following limitations:

58. (New) Apparatus according to claim 1, further comprising an observation unit configured for generating said data sequence from measurements of one or more tangible objects.

(See Ben-Gal: especially section 4, "Numerical Example", and Figure 5).

50. In regards to Claim 59, Ben-Gal teaches the following limitations:

59. (New) Apparatus according to claim 19, further comprising an observation unit configured for generating said data sequence from measurements of one or more tangible objects.

(See Ben-Gal: especially section 4, "Numerical Example", and Figure 5).

51. In regards to Claim 60, Ben-Gal teaches the following limitations:

60. (New) Apparatus according to claim 1, wherein said method further comprises generating said data sequence from measurements of one or more tangible objects.

(See Ben-Gal: especially section 4, "Numerical Example", and Figure 5).

Claim Rejections - 35 USC § 103

52. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

53. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

54. The prior art used for these rejections is as follows:

- a. Ben-Gal, I. et al. "An Information Theoretic Approach for Adaptive Monitoring of Processes." ASI2000, The Annual Conf. of ICIMS- NOE and IIMB. 2000. ("**Ben-Gal**").
- b. Weinberger, M.J., Ben-Gal J.J., et al. "A Universal Finite Memory Source." IEEE Transactions on Information Theory. May 1995. Vol. 41, Issue 3, pp.643-652. (Hereinafter "**Weinberger**").
- c. Naranjo, S.E. et al. "Resampling Software for Analysis and Validation of Enumerative and Binomial Sampling Plans." Undated. Printed Dec. 9 2005. <http://www.wcrl.ars.usda.gov/software/rvspman.html>. (Hereinafter "**Naranjo**").

55. Examiner notes that the Ben-Gal reference has a different inventive entity than the instant application.

56. Examiner also notes that the Ben-Gal reference was disclosed by the Applicants in the IDS submitted on 5/3/2006. The Applicants disclosed the publication date of these references as "2000". Examiner therefore could not determine if the reference is old enough to qualify as 35 U.S.C. 102(b) prior art.

57. The claim rejections are hereby summarized for Applicants' convenience. The detailed rejections follow.

58. Claim 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-Gal in view of Naranjo.

59. In regards to Claim 25, Ben-Gal does not expressly teach the following limitations:

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25. Apparatus according to claim 22, wherein said statistical distance comprises an SPRT statistic.

Naranjo, on the other hand, expressly teaches (see p.8) that Wald's SPRT statistic dates back to 1947.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Ben-Gal with those of Naranjo to use an SPRT statistic instead of the KL statistic.

The suggestion for doing so is found in Naranjo, which teaches that Wald's SPRT was an old and well known statistical distance measure at the time the invention was made, and moreover, that its use as a threshold value was also old and well known.

60. Claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-Gal in view of Weinberger.

61. In regards to Claim 26, Ben-Gal does not expressly teach the following limitations:

26. Apparatus according to claim 22, wherein said statistical distance comprises an MDL statistic.

On the other hand, Weinberger teaches the use of the "MDL principle" on p.646, right column, last paragraph.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Ben-Gal with those of Weinberger in order to describe the context algorithm in more detail.

The suggestion for doing so is found in Ben-Gal, which expressly teaches that "The details of the context algorithm, which constructs the context tree ... can be found in /7,8/", where "7" is the Weinberger reference.

62. In regards to Claim 27, Ben-Gal does not expressly teach the following limitations:

27. Apparatus according to claim 22, wherein said statistical distance comprises a Multinomial goodness of fit statistic.

On the other hand, Weinberger teaches the use of the fitting data on p.644, left column, second paragraph, and p.644, right column, Section II, last paragraph. See also p.648, Section IV, first paragraph.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Ben-Gal with those of Weinberger in order to describe the context algorithm in more detail.

The suggestion for doing so is found in Ben-Gal, which expressly teaches that "The details of the context algorithm, which constructs the context tree ... can be found in /7,8/", where "7" is the Weinberger reference.

63. In regards to Claim 28, Ben-Gal does not expressly teach the following limitations:

28. Apparatus according to claim 22, wherein said statistical distance comprises a Weinberger Statistic.

On the other hand, Weinberger expressly teaches the use of a context selection rule (see p.647, right column, Eq.15) that use a statistic s_t that "denotes

the longest path in the intersection of T_t and T_t . Examiner interprets that this corresponds to the claimed "Weinberger Statistic."

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Ben-Gal with those of Weinberger in order to describe the context algorithm in more detail.

The suggestion for doing so is found in Ben-Gal, which expressly teaches that "The details of the context algorithm, which constructs the context tree ... can be found in /7,8/", where "7" is the Weinberger reference.

64. In regards to Claim 29, Ben-Gal does not expressly teach the following limitations:

29. Apparatus according to claim 20, said tree reducer comprising a tree pruner for removing from said tree any node whose counter values are within a threshold distance of counter values of a preceding node in said tree.

On the other hand, Weinberger expressly teaches the use of a context selection rule (see p.647, right column, Eq.15) that use a statistic s_t that "denotes the longest path in the intersection of T_t and T_t . Examiner interprets that this corresponds to the claimed "threshold distance".

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Ben-Gal with those of Weinberger in order to describe the context algorithm in more detail.

The suggestion for doing so is found in Ben-Gal, which expressly teaches that "The details of the context algorithm, which constructs the context tree ... can be found in /7,8/", where "7" is the Weinberger reference.

Response to Amendment

Re: Claim Objections

65. Applicants' amendments have overcome the claim objections. The claim objections have therefore been withdrawn.

Re: Claim Rejections - 35 USC § 112

66. Applicants' amendments have overcome the 35 USC § 112 claim rejections based on antecedent basis. Those rejections have therefore been withdrawn.

67. New 35 USC § 112 claim rejections have been applied, as necessitated by amendment.

Re: Claim Rejections - 35 USC § 101

68. Examiner has withdrawn the 35 USC § 101 rejections based on the lack of a concrete, useful, tangible result. Examiner has applied new 35 USC § 101 rejections based on the abstract idea preclusion theory.

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Re: Claim Rejections - 35 USC §§ 102 and 103

69. The rejections are maintained because the 37 CFR 1.132 declaration is insufficient.

70. Rejections have been applied to newly added claims 58-60.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a bi-week, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached at (571) 272-3749.

Any response to this office action should be faxed to (571) 273-8300, or mailed to:

USPTO
P.O. Box 1450
Alexandria, VA 22313-1450

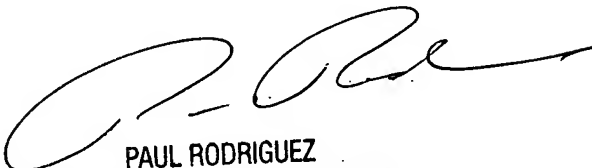
or hand carried to:

USPTO
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Ayal I. Sharon
Art Unit 2123
April 27, 2007



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